

SEQUENCE LISTING

<110> DeveloGen Aktiengesellschaft für entwicklungsbiolo

<120> Method for preventing and treating diabetes using DG119

<130> 32043PWO

<140> PCT/EP2004/013535

<141> 2004-11-29

<150> EP03/027514.3

<151> 2003-11-28

<160> 9

<170> PatentIn Ver. 2.1

<210> 1

<211> 719

<212> PRT

<213> zebrafish

<220>

<223> DG119-1A1A

<400> 1

Met	Thr	Glu	Met	Lys	Ile	Trp	Cys	Val	Leu	Leu	Met	Ala	Phe	Ala	Leu
1				5					10					15	

Thr	Ser	Ala	Ala	Pro	Lys	Ser	His	Leu	Arg	Leu	Glu	Glu	Lys	Thr	Lys
			20					25					30		

Asp	Asn	Asn	Asp	Thr	Leu	Gln	Val	Glu	Ile	Asp	Asn	Gln	Glu	His	Ile
		35					40					45			

Leu	Ser	Gln	Leu	Leu	Gly	Asp	Tyr	Asp	Lys	Val	Lys	Ala	Leu	Ser	Glu
	50					55					60				

Gly	Ser	Asp	Cys	Gly	Cys	Lys	Cys	Val	Val	Arg	Pro	Leu	Ser	Ala	Ser
65					70					75				80	

Ala	Cys	Gln	Arg	Ile	Arg	Glu	Gly	His	Ala	Thr	Pro	Gln	Asp	Phe	Tyr
				85					90					95	

Thr	Val	Glu	Thr	Ile	Thr	Ser	Gly	Pro	His	Cys	Lys	Cys	Ala	Cys	Ile
				100				105					110		

Ala Pro Pro Ser Ala Leu Asn Pro Cys Glu Gly Asp Phe Arg Leu Lys
 115 120 125

Lys Leu Arg Gln Ala Gly Lys Asp Asn Ile Lys Leu Ser Thr Ile Leu
 130 135 140

Glu Leu Leu Glu Gly Ser Phe Tyr Gly Met Asp Leu Leu Lys Leu His
 145 150 155 160

Ser Val Thr Thr Lys Ile Leu Asp Arg Met Asp Thr Ile Glu Lys Met
 165 170 175

Val Leu Asn Asn Gln Thr Glu Glu Lys Leu Asn Thr Ile Ser Thr Ser
 180 185 190

Pro Asn Pro Gln Leu Ser Thr Ser Ser Pro Thr Thr Leu Pro Ser Val
 195 200 205

Ile Gln Glu Lys Ser Thr Ser Leu Arg Gln Gln Asn Asp Glu Ala Ala
 210 215 220

Ala Phe Gln His Met Glu Ser Lys Tyr Glu Glu Lys Phe Val Gly Asp
 225 230 235 240

Ile Leu Asn Ser Gly Ser Asp Leu Asn Lys Ala Thr Thr Ala Leu Gln
 245 250 255

Glu Gln Glu Gln Gln Gly Arg Lys Lys Gln Pro Lys Ile Thr Val Arg
 260 265 270

Gly Ile Thr Tyr Tyr Arg Ser Asp Pro Val Asp Glu Met Asp Ser Glu
 275 280 285

Lys Asn Leu Lys Glu Thr Ser Ala Ser Ser Val Thr Gln Thr Gly Ala
 290 295 300

Leu Ile Lys Glu His Leu Lys Ala Ser Thr Gln Ser Thr Leu Asn Thr
 305 310 315 320

Leu Thr Pro Ser Pro Thr Ser His Ser Asn Ala Leu Thr Val Thr Glu
 325 330 335

Ser Ser Val Gly Ile Asn Ala His Lys Gly Glu Val Thr Thr Ile Val
 340 345 350

Met Thr Ala Ser Val Thr Gly Ser Lys Thr Asp Ser Val Thr Asp Leu
 355 360 365

Thr Gln Leu Ser Pro Arg Val Arg Glu Thr Leu Thr Thr Thr Arg Thr
 370 375 380

Thr Thr Lys Thr Ala Thr Thr Ser Gln Pro Val Lys Arg Lys Tyr Ser
 385 390 395 400

Ile Ser Trp Asp Glu Glu Glu Glu Ala Val Val Pro Glu Gln Val Glu
 405 410 415

Glu Glu Lys Ala Val Lys Pro Val Val Glu Asp Lys Val Gly Glu Glu
 420 425 430

Pro Gln Arg Lys Pro Gly Thr Ala His His Gln Ala Lys Thr Ile Ser
 435 440 445

Thr Val Lys Gln Gln Ile Lys Phe Ser Leu Gly Met Cys Lys Asp Thr
 450 455 460

Leu Ala Thr Ile Ser Glu Pro Ile Thr His Asn Thr Tyr Gly Arg Asn
 465 470 475 480

Glu Gly Ala Trp Met Lys Asp Pro Leu Asp Gln Asp Asp Lys Ile Tyr
 485 490 495

Val Thr Asn Tyr Tyr Tyr Gly Asn Asn Leu Leu Glu Phe Arg Asn Ile
 500 505 510

Asp Val Phe Lys Gln Gly Arg Phe Thr Asn Ser Tyr Lys Leu Pro Tyr
 515 520 525

Asn Trp Ile Gly Thr Gly His Val Val Tyr Lys Gly Ala Phe Tyr Tyr
 530 535 540

Asn Arg Ala Phe Ser Arg Asp Ile Ile Lys Phe Asp Leu Arg Leu Arg
 545 550 555 560

Tyr Val Ala Ala Trp Thr Met Leu His Asp Ala Val Phe Glu Asn Asp
 565 570 575

Asp Val Ser Ser Trp Arg Trp Arg Gly Asn Ser Asp Met Asp Leu Ala
 580 585 590

Ile Asp Glu Ser Gly Leu Trp Val Ile Tyr Pro Ala Leu Asp Asp Glu
 595 600 605

Gly Phe Leu Gln Glu Val Ile Val Leu Ser Arg Leu Asn Pro Thr Asp
 610 615 620

Leu Ser Met Lys Arg Glu Thr Thr Trp Arg Thr Gly Leu Arg Arg Asn
 625 630 635 640

Arg Tyr Gly Asn Cys Phe Ile Val Cys Gly Val Leu Tyr Ala Thr Asp
 645 650 655

Ser Tyr Asn Gln Gln Asp Thr Asn Leu Ser Tyr Ala Phe Asp Thr His
 660 665 670

Thr Asn Thr Gln Val Ile Pro His Leu Pro Phe Ser Asn Asn Tyr Thr
 675 680 685

Tyr Val Thr Gln Ile Asp Tyr Asn Pro Lys Glu Arg Val Leu Tyr Ala
 690 695 700

Trp Asp Asn Gly His Gln Val Thr Tyr Asn Val Gln Phe Ala Tyr
 705 710 715

<210> 2

<211> 594

<212> PRT

<213> zebrafish

<220>

<223> DG119-1B1B

<400> 2

Met Gly Leu Leu Leu Tyr Ile Phe Cys Cys Val Phe Cys Leu Thr Arg
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Ala Asn Val Glu Gln Gln Ala Thr Asp Asn Thr Asp Asn Arg Ala Thr
 20 25 30

Leu Glu Asp Glu Met Asp Asn Gln Glu Asn Ile Leu Thr Gln Leu Ile
 35 40 45

Gly Asp Tyr Asp Lys Val Lys Thr Leu Ser Glu Gly Ser Asp Cys Gln
 50 55 60

Cys Lys Cys Val Val Arg Pro Met Ser Arg Ser Ala Cys Lys Arg Ile
 65 70 75 80

Glu Glu Ala Gln Ala Lys Ile Glu Asp Phe Tyr Thr Val Glu Pro Val
 85 90 95

Thr Ala Gly Pro Asn Cys Lys Lys Cys Ala Cys Ile Ala Pro Pro Ser

100	105	110
Ala Leu Asn Pro Cys Glu Gly Asp Phe Arg Phe Lys Lys Leu Gln Lys		
115	120	125
Thr Gly Gln Tyr Asp Ile Lys Leu Ser Asn Ile Met Asp Leu Leu Glu		
130	135	140
Glu Arg Val Asp Asn Ile Glu Lys Gly Glu Lys Gly Gln Gly Lys Gly		
145	150	155
		160
Ala Arg Ser Asn Gln Arg Gln Glu Lys Lys Lys Arg Leu Ser Val Val		
	165	170
		175
Cys Trp Ser Leu His Cys Arg Arg Thr Gln Gln Arg Leu Leu Leu Thr		
	180	185
		190
Leu Arg Tyr Arg Cys Xaa Ser Val Leu Glu Pro Ser Leu Gln Lys Asn		
	195	200
		205
Ala Ala Ala Ala Phe Ala His Thr Glu Val Gln Met Gln Gln Phe Ile		
	210	215
		220
Pro Asp Gln Arg Lys Tyr Glu Glu Lys Phe Val Gly Asn Gln Gly Pro		
225	230	235
		240
Ser Lys Pro Val Leu Lys Lys Ser Lys Ser Glu Gly Gln Glu Glu Gln		
	245	250
		255
His Lys Pro Ala Lys Thr Lys Ala Asp Ala Lys Asn Met Ser Leu Arg		
	260	265
		270
Ser Met Thr Phe Tyr Lys Ala Asn Arg Met Glu Asp Ser Glu Gly Glu		
	275	280
		285
Glu Arg Asp Leu Ile Ile Glu Asp Gln Leu His Lys Gln Gly Leu Asn		
	290	295
		300
Thr Pro Val Thr Thr Pro Glu Ala Thr Val Thr Val Thr Gln Ser Thr		
305	310	315
		320
Thr Ile Asn Leu Asn Thr Gln Asn Phe Thr Thr Ala Arg Met Ser Asn		
	325	330
		335
Val Thr Lys Gln Thr Gln Gly Gln Ser Val Lys Ala Met Met Ser Ser		
	340	345
		350
Thr Ile Thr Thr Glu Arg Pro Thr Met Pro Thr Ser Thr Thr Ser Thr		

355	360	365
Ser Thr Met Thr Pro Gly Thr Asn Thr Thr Thr Ile Ala Thr Pro Leu		
370	375	380
Val Val Pro Lys Gln Leu Ala Ser Val Thr Val Gly Gln Val Ser Asn		
385	390	395
400		
Ser Tyr Lys Leu Pro Tyr Asn Trp Ile Gly Thr Gly His Val Val Tyr		
405	410	415
Ser Gly Ser Phe Phe Tyr Asn Arg Ala Phe Ser Arg Asp Ile Ile Arg		
420	425	430
Phe Asp Leu Arg Leu Arg Tyr Val Ala Ala Trp Thr Thr Leu His Asp		
435	440	445
Ala Ile Leu Glu Glu Glu Glu Ala Pro Trp Thr Trp Gly Gly His Ser		
450	455	460
Asp Ile Asp Phe Ser Val Asp Glu Ser Gly Leu Trp Leu Val Tyr Pro		
465	470	475
480		
Ala Leu Asp Asp Glu Gly Phe His Gln Glu Val Ile Ile Leu Ser Lys		
485	490	495
Leu Arg Ala Ser Asp Leu Gln Lys Glu Lys Ser Trp Arg Thr Gly Leu		
500	505	510
Arg Arg Asn Tyr Tyr Gly Asn Cys Phe Val Ile Cys Gly Val Leu Tyr		
515	520	525
Ala Val Asp Ser Phe Glu Arg Thr His Ala Asn Ile Ser Tyr Ala Phe		
530	535	540
Asp Thr His Thr His Thr Gln Met Ile Pro Arg Leu Pro Phe Ile Asn		
545	550	555
560		
Asn Tyr Thr Tyr Thr Thr Gln Ile Asp Tyr Asn Pro Lys Glu Arg Met		
565	570	575
Leu Tyr Ala Trp Asp Asn Gly His Gln Val Thr Tyr Asp Val Ile Phe		
580	585	590
Ala Tyr		

<210> 3
<211> 146
<212> PRT
<213> zebrafish

<220>
<223> DG119-2A2A

<400> 3
Met Trp Arg Ile Val Glu Leu Val Ala Cys Leu Leu Met Met Ser Ser
1 5 10 15
His Val Ser Ser Gln Ser Lys Ile Phe Gly Glu Glu Gln Val Arg Met
20 25 30
Thr Ser Glu Gly Ser Asp Cys Arg Cys Lys Cys Ile Met Arg Pro Leu
35 40 45
Thr Arg Asp Ala Cys Ala Arg Leu Arg Thr Gly Ser Val Arg Val Glu
50 55 60
Asp Phe Tyr Thr Val Glu Thr Val Ser Ser Gly Ala Asp Cys Lys Cys
65 70 75 80
Ser Cys Thr Ala Pro Pro Ser Ser Leu Asn Pro Cys Glu Asn Glu Trp
85 90 95
Lys Arg Glu Lys Leu Lys Lys Gln Ala Pro Glu Leu Leu Lys Leu Gln
100 105 110
Ser Met Val Asp Leu Leu Glu Gly Thr Leu Phe Ser Met Asp Leu Leu
115 120 125
Lys Val His Ser Tyr Ile Asn Lys Val Val Ser Gln Met Asn Asn Leu
130 135 140
Glu Glu
145

<210> 4
<211> 287
<212> PRT
<213> zebrafish

<220>

<223> DG119-2B2B

<400> 4

Met Trp Ile Tyr Ala Ser Val Leu Thr Tyr Leu Leu Leu Leu Thr Arg
1 5 10 15

Asp Ala Arg Ser Leu Ser Lys Ile Phe Gly Glu Pro Glu Pro Val Lys
20 25 30

Met Ile Ser Glu Gly Ser Asp Cys Arg Cys Lys Cys Val Met Arg Pro
35 40 45

Leu Ser Ile Glu Ala Cys Ser Arg Leu Arg Asp Gly Ser Leu Arg Val
50 55 60

Asp Asp Phe Tyr Thr Val Glu Thr Val Ser Ser Gly Ser Asp Cys Lys
65 70 75 80

Cys Ser Cys Thr Ala Pro Pro Ser Ser Leu Asn Pro Cys Glu Asn Glu
85 90 95

Trp Arg Thr Glu Lys Leu Xaa Lys Gln Ala Pro Glu Leu Leu Lys Leu
100 105 110

His Ser Met Val Asp Leu Leu Glu Gly Thr Leu Tyr Ser Met Asp Leu
115 120 125

Met Lys Val His Ala Tyr Met Asn Lys Val Val Ser Gln Met Asn Thr
130 135 140

Leu Glu Glu Val Met Thr Ile Lys Thr Asn Leu Thr Arg Glu Asn Glu
145 150 155 160

Phe Val Arg Asp Ser Val Val Asn Leu Ser Asn Gln Leu Lys Arg Tyr
165 170 175

Glu Asn Tyr Ser Asp Ile Met Val Ser Ile Lys Lys Glu Ile Ser Ser
180 185 190

Leu Gly Leu Gln Leu Leu Gln Lys Asp Ala Ala Ser Asp Ser Lys Ala
195 200 205

Gln Val Gly Thr Glu Ser Lys Lys Ser Lys Glu Ala Ile Lys Pro Pro
210 215 220

Asn Lys Lys Pro Pro Ala Val Lys Pro Pro Pro Lys Gln Pro Lys Glu
225 230 235 240

Lys Pro Val Lys Pro Lys Lys Glu Ala Pro Ala Lys Ala Ala Lys Pro
245 250 255

Ala Lys Pro Asp Pro Thr Thr Lys Thr Lys Thr Ser Val His Gln Thr
260 265 270

Gly Val Ile Arg Gly Ile Thr Tyr Tyr Lys Ala Ser Lys Ser Glu
275 280 285

<210> 5
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer

<220>
<223> m1192 forward primer

<400> 5
gtgctgctgc tgctggtttt g 21

<210> 6
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer

<220>
<223> m1192 reverse primer

<400> 6
ctgtgggctg gggtattctg c 21

<210> 7
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer

<220>
<223> mDG119-1 forward primer

<400> 7
gaggaaaatg acatagaaga gcagc

25

<210> 8
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer

<220>
<223> mDG119-1 reverse primer

<400> 8
gctgatcttc tatcagcaag tcca

24

<210> 9
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:probe

<220>
<223> mDG119-1 probe

<400> 9
cgatgagctt ttcagtggcg acagtg

26